1.7 Chew On This

A Solidify Understanding Task

Mr. and Mrs. Gloop want their son, Augustus, to do his homework every day. Augustus loves to eat candy, so his parents have decided to motivate him to do his homework by giving him candies for each day that the homework is complete. Mr. Gloop says that on the first day that Augustus turns in his homework, he will give him 10 candies. On the second day he promises to give 20 candies, on the third day he will give 30 candies, and so on.

1. Write both a recursive and an explicit formula that shows the number of candies that Augustus earns on any given day with his father's plan.

2. Use a formula to find how many candies Augustus will get on day 30 in this plan.

Augustus looks in the mirror and decides that he is gaining weight. He is afraid that all that candy will just make it worse, so he tells his parents that it would be ok if they just give him 1 candy on the first day, 2 on the second day, continuing to double the amount each day as he completes his homework. Mr. and Mrs. Gloop like Augustus' plan and agree to it.

3. Model the amount of candy that Augustus would get each day he reaches his goals with the new plan.

4. Use your model to predict the number of candies that Augustus would earn on the 30th day with this plan.

5. Write both a recursive and an explicit formula that shows the number of candies that Augustus earns on any given day with this plan.

Augustus is generally selfish and somewhat unpopular at school. He decides that he could improve his image by sharing his candy with everyone at school. When he has a pile of 100,000 candies, he generously plans to give away 60% of the candies that are in the pile each day. Although Augustus

may be earning more candies for doing his homework, he is only giving away candies from the pile that started with 100,000. (He's not that generous.)

6. How many pieces of candy will be left on day 4? On day 8?

7. Model the amount of candy that would be left in the pile each day.

8. How many days will it take for the candy to be gone?

READY, SET, GO! **Name** **Period** **Date**

READY

Topic: Distinguishing between arithmetic and geometric sequences

Find the missing values for each arithmetic or geometric sequence. Underline whether it has a constant difference or a constant ratio. State the value of the constant difference or ratio. Indicate if the sequence is arithmetic or geometric by circling the correct answer.

1. 5, 10, 15, ___ , 25, 30, ___...

Common difference or ratio?

Common Difference/ratio = _____

Arithmetic or geometric?

2. 20, 10, ___ , 2.5, ___,...

Common difference or ratio?

Common Difference/ratio = _____

Arithmetic or geometric?

3. 2, 5, 8, ___ , 14, ___, ...

Common difference or ratio?

Common Difference/ratio = _____

Arithmetic or geometric?

4. 30, 24 , ___ , 12, 6, ...

Common difference or ratio?

Common Difference/ratio = _____

Arithmetic or geometric?

SET

Topic: Recursive and explicit equations

Determine whether the given information represents an arithmetic or geometric sequence. Then write the recursive and the explicit equation for each.

5. 2, 4, 6, 8, ...

Arithmetic or geometric?

Recursive:

_____

Explicit:

_____

6. 2, 4, 8, 16, ...

Arithmetic or geometric?

Recursive:

_____

Explicit:

_____

7.

Time (in days)	Number of dots
1	3
2	7
3	11
4	15

Arithmetic or geometric?

Recursive:

Explicit:

8.

Time (in days)	Number of cells
1	5
2	8
3	12.8
4	20.48

Arithmetic or geometric?

Recursive:

Explicit:

9. Michelle likes chocolate but it causes acne. She chooses to limit herself to three chocolate bars every 5 days. (So, she eats part of a bar each day.)

Arithmetic or geometric?

Recursive:

Explicit:

10. Scott decides to add running to his exercise routine and runs a total of one mile his first week. He plans to double the number of miles he runs each week.

Arithmetic or geometric?

Recursive:

Explicit:

11. Vanessa has $60 to spend on rides at the state fair. Each ride costs $4.

Arithmetic or geometric?

Recursive:

Explicit:

12. Cami invested $6,000 into an account that earns 10% interest each year. (Hint: Make a table of values to help yourself.)

Arithmetic or geometric?

Recursive:

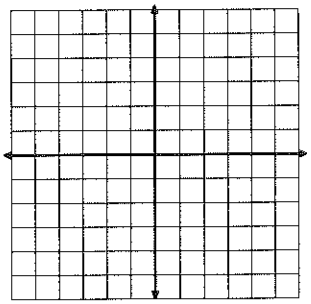
Explicit:

GO

Topic: Graphing and counting slope between two points.

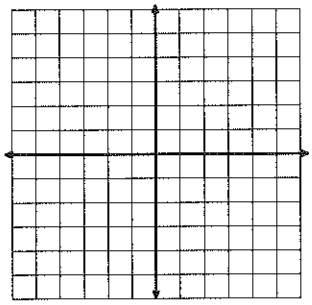
For the following problems two points and a slope are given. Plot and label the 2 points on the graph. Draw the line segment between them. Then sketch on the graph how you count the slope of the line by moving up or down and then sideways from one point to the other.

13. A(2 , -1) and B(4 , 2)



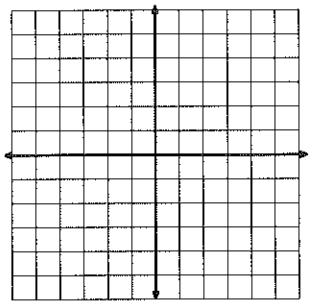
Slope: $m = \frac{3}{2}$

14. H(-2 , 1) and K(2 , 5)



Slope: $m = 1 \text{ or } \frac{1}{1}$

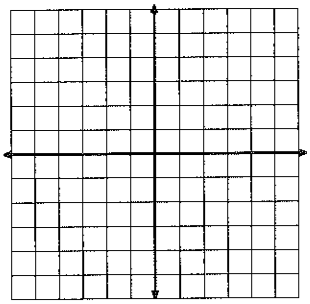
15. P(0 , 0) and Q(3 , 6)



Slope: $m = 2 \text{ or } \frac{2}{1}$

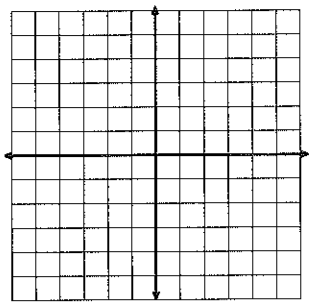
For the following problems, two points are given. Plot and label these points on the graph. Then count the slope.

16. C(-3 , 0) and D(0 , 5)



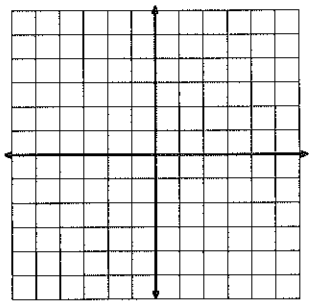
Slope: $m =$

17. E(-2 , -1) and N(-4 , 4)



Slope: $m =$

18. S(0 , 3) and W(1 , 6)



Slope: $m =$